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U.S. Marine Corps.  
6th Division.

G-2 Summary

SIXTH MARINE DIVISION

ON

OKINAWA

SHIMA

A.G. No. 01821



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G-2 SUMMARY

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1 August, 1945.

The Okinawa Operation was in many ways a prelude to future operations in the Pacific War. For the first time, a segment of the Japanese homeland was invaded by American troops which resulted in the emergence of numerous problems not previously encountered. Even as the phases of "Jungle Warfare" and "Atoll Warfare" required special study and evaluation earlier in the war, so does the new phase inaugurated at Okinawa require special study and evaluation. With its increased problems in the realms of Counter-Intelligence, Prisoner of War Interrogation, Aerial Photo Interpretation and others the G-2 Section has been particularly elevated in importance since the inception of the final phase of combat in the Pacific War. Okinawa was a bitter laboratory. I believe that the lessons learned at so dear a price on that strategic island should be published and distributed for the benefit of combat units who will land again on Japanese soil.

  
LEMUEL C. SHEPHERD, Jr.  
CG, Sixth Marine Division

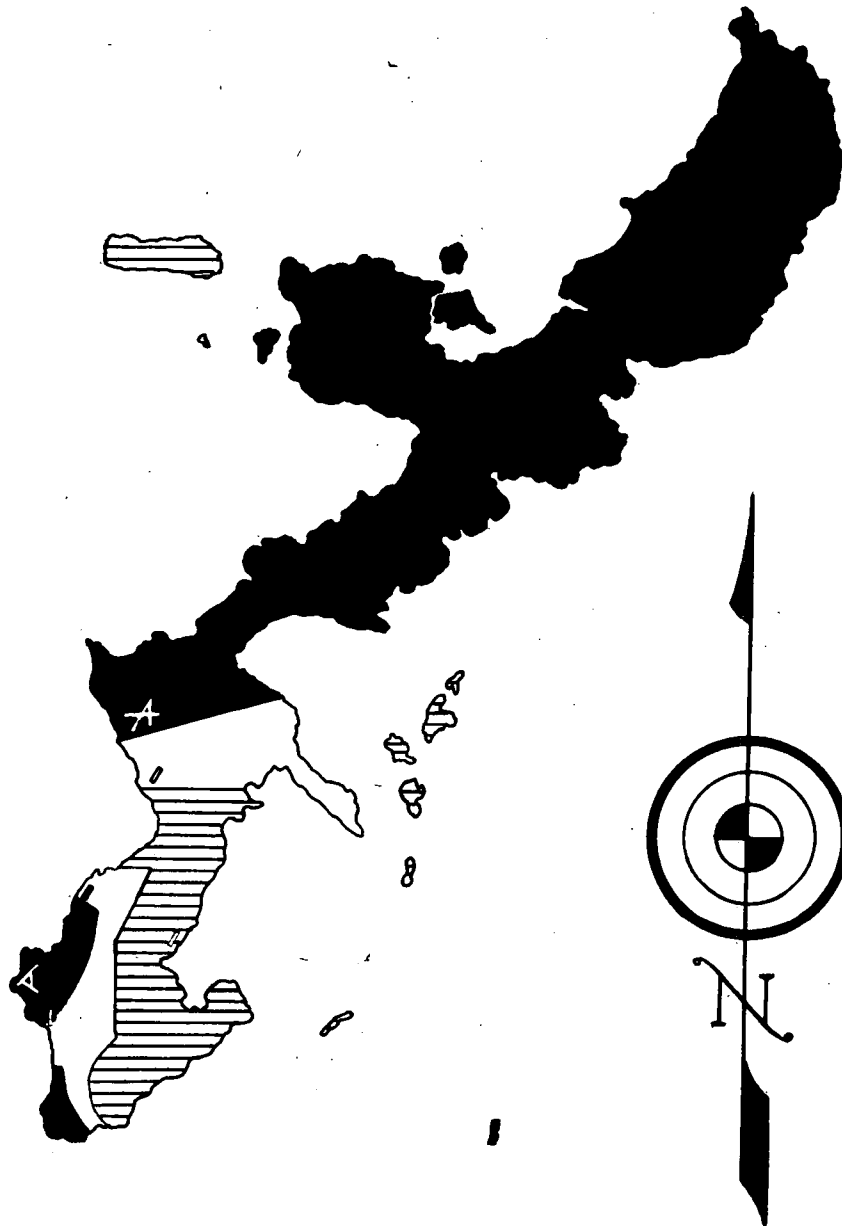
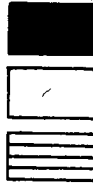
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6th Marine Div-327 sq.mi

1st Marine Div-61 sq.mi.

24th Army Corps-68 sq.mi.

7th, 27th, 77th & 96th Divs



OKINAWA SHIMA

# CONTENTS

Cave-Defense - - - - -	-page 1
Naha - - - - -	-page 9
Jap Diary - - - - -	page 12
Beach Defense - - - - -	page 15
Construction - - - - -	page 29
Deception - - - - -	page 43
Terrain - - - - -	page 46
Tombs - - - - -	page 51
Weapons and Equipment - - - - -	page 54
Sugar Loaf Hill - - - - -	page 64

# CAVE - DEFENSE

The Japanese developed a cave-defense technique on Okinawa which was a considerable departure from previous defensive methods employed by the enemy in the Pacific War. This technique is worthy of note since it is believed that it will have a material influence on enemy defensive methods in the future.

The following article has been written as the result of a careful analysis of the enemy's cave-defense tactics on Okinawa coupled with information received from enemy prisoners of war.

As a result of experience derived in the Marshalls and Marianas, the Chief of the Japanese General Staff decided to abandon the log-type pillbox in favor of one which would afford protection against allied naval gunfire, artillery, and air strikes.

Therefore, in August and September, 1944, the Japanese on Okinawa began building cave defenses on a small scale. In response to orders emanating from higher echelon, they began, in December, 1944, the hurried construction of full-scale cave defenses for the Okinawa area. According to prisoners of war, Lieutenant General Cho Isamu, 32nd Army Chief of Staff, was an exponent of the use of the cave-type defense and contributed a great deal not only to the over-all plan, but also to the actual construction of the system.

Responsibility for construction of caves for use as headquarters, storage areas, and general rear-echelon use was entrusted to engineer construction units. The construction of those caves which were to be occupied as defensive positions was usually accomplished in the following manner. The over-all design of the positions to be exploited was set forth by the defense sector commander. Thereafter, a subordinate unit (for example, a battalion) would be ordered to set up a cave-type defense on a certain hill or hill area. On arriving on the ground, the battalion commander, after conferring with the commanders of adjacent units, would assign sectors of responsibility, and would order his company commanders to establish a cave-type defense on the hill. He would hold remaining units in reserve, assigning them the duty of setting up an AA defense. The company commanders, after conferring together, would select positions and cave-sets, taking into consideration terrain, construction needs, the general cave network, and the necessity for mutually supporting fire.

Actual construction of the caves was accomplished by the troops, attached labor personnel, Boeitai (home guards), and by quotas of Okinawan villagers conscripted on a day to day basis. On occasion, engineer troops were also used.

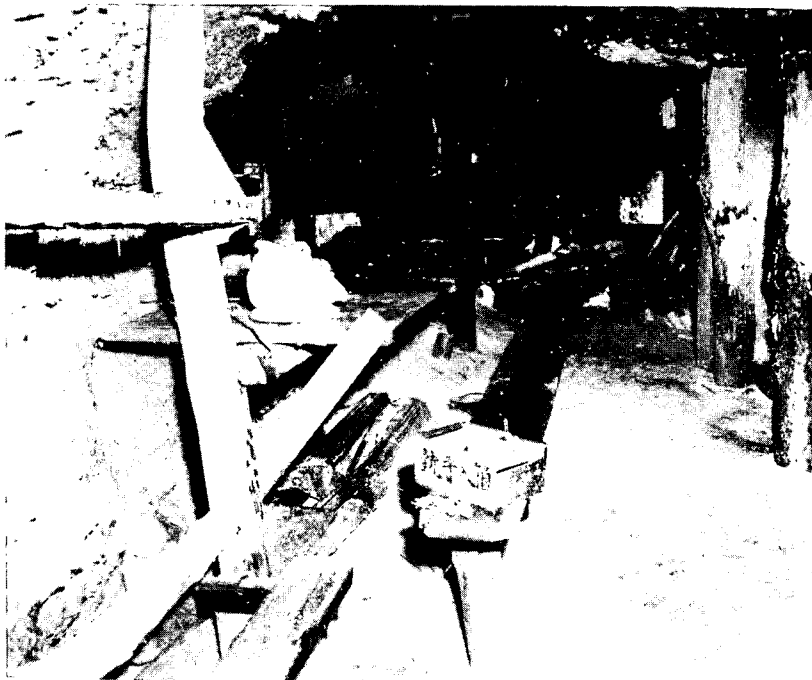


(Upper Left) Forward slope covered emplacement. (Upper Right) Segment of Anchor Hill showing numerous caves. (Lower Left) Personnel trench covering a cave entrance. (Lower Right) A cave overlooking Naha Airfield.

The caves proper, consisted of a cross-network of tunnels with exits on both the forward and reverse slopes of the hill and also on the flanks. It was required that facilities for quartering all the troops manning the hill's defense, including sleeping quarters, cooking facilities, latrines, etc. should be installed. These facilities were sometimes provided in one large room, but were usually installed in several smaller ones. Machine gun positions were built into small rooms off from tunnels paralleling the slope of the hill, and rifle slits were also built into the hill so that rifle fire could be maintained from cave passages. Outside of the caves, octopus type foxholes were dug in order to defend the mouth of the caves, and to enable the riflemen to carry out their primary fire missions. If a unit possessed five automatic weapons, at least two would be emplaced so that each had a fixed field of fire of 30°, mutually intersecting to create an interlocking band of fire. The other automatic weapons were used to fire at targets of opportunity, or were emplaced in such a manner that they might cover weak points in the unit defense. All automatic weapons not



View of a hill south of the Asa River which the enemy converted to a cave-defense position.



A messhall built 80 feet below the surface of a hill on Oroku Peninsula. Galleys, quarters and storage chambers had also been constructed below the surface.



A machine gun port in the same hill on Oroku Peninsula as above. All approaches to the hill were covered by such ports as these.

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firing from inside the hill were to have had a primary firing position and two alternate firing positions, and the usual procedure was to shift positions at an interval of about one hour. Communications trenches leading from all positions on the surface of the hill to cave entrances were constructed.

In regard to the tactical use of cave-type defense, the SOP was to keep one-third or more of the unit out of the cave and on the forward slope of the hill and the remainder in the cave and in reserve. At a time when enemy artillery, naval gunfire, or air strikes were registering on the unit area, the soldiers manning the positions outside pulled back into the cave, leaving 10 or 12 men as lookouts for each company. When the enemy infantry started its advance or was close at hand the positions were again fully manned.

During the early stages of the campaign, only 2 or 3 lookouts were left outside the cave positions during an artillery bombardment, but this number was insufficient to prevent the enemy from over-running the cave positions. When a fire-fight occurred and it was necessary to reinforce the units on the forward slope, reinforcements were never sent out of the exits on the forward slope. Instead, they were sent out of exits on the right and left flanks and to the rear, enabling them to circle around the sides and rear of the hill and deliver flanking fire. Also, this enabled them to assume more advantageous positions. By using a side exit, reinforcements could also be sent from the units on one hill to a hard-pressed garrison on an adjacent hill position.

Finally, in the event that it was necessary to retreat, cave exits on the reverse slope could be used while fire from the cave positions on the forward slope covered the withdrawal.

The cave-defense system therefore has the following characteristics:

1. It affords all around protection for infantry from naval gunfire, air strikes, and artillery fire.
2. It affords fire positions for small arms, automatic weapons, and even artillery.
3. It affords space for headquarters, storage, and barracks and makes them relatively safe.
4. It is a system of mutually supporting strong-points.
5. It is a defense in depth and offers opportunities for withdrawal actions involving relatively small casualties by utilizing reverse slope or flank exits.
6. It offers good cover and concealment for individual riflemen and automatic weapons.



(Upper Left) Reverse slope exit and communication trench. (Upper Right) Forward slope machine-gun position. (Center) A commander's office 80 feet below the surface. (Lower Left) View of a hill converted to cave-defense. (Lower Right) Machine-gun port covering approach to a hill.

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Japanese dugout protected by camouflaged entrenchments.

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Sand-bagged and revetted personnel dugouts.



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One highly intelligent officer-prisoner considered the cave-type defense the most effective of the enemy's capabilities in defensive action. However, he felt that its weak point was that only about one-third of the unit could be actually committed to a fire-fight at any one time. Also, in the event that a rapid advance of enemy forces should overrun the flank and reverse slope exits of this type of defense, those units (one-half to two-thirds) remaining in the cave as the reserves, are trapped in the cave and are unable to employ their weapons effectively.

This prisoner of war stated that in his opinion, attacking forces should overrun the hill with tank and infantry teams and seize the high ground as quickly as possible. If this is accomplished quickly, the bulk of the defending force can be trapped. However, flank and reverse slope exits must be blocked as well as forward slope exits in order to prevent the enemy from sallying forth after dark and affecting a night attack or laying down mortar fire from the reverse slope. The prisoner stated that Americans often failed to blow a cave properly and that the hole was therefore widened rather than closed due to the ineffective use of explosives. This allowed Japanese soldiers in hills that had been overrun to continue to resist. Finally, the prisoner stated that the best method of attacking a cave-type defense was to lay down mortar fire, drawing the enemy into their caves, and then to advance quickly with tanks and infantry, sweeping over the hill and sealing its reverse and flank slope exits as well as its forward slope exits before dark.



# NAHA

Naha, a city of 65,000 and the capital of Okinawa Prefecture, was taken by the Sixth Marine Division. It was the largest city to fall to Marines in the Pacific War.

The devastation wrought in this once prosperous port city is clearly and completely illustrated by the photographs below. Prior to the landings of the Tenth Army on 1 April, 1945, the city had been levelled by a combination of B-29 and carrier strikes. The assault by the Sixth Marine Division increased the extent of destruction. It is of interest to note that only buildings of steel and concrete construction remained standing. The great remainder of Naha has almost entirely disappeared.

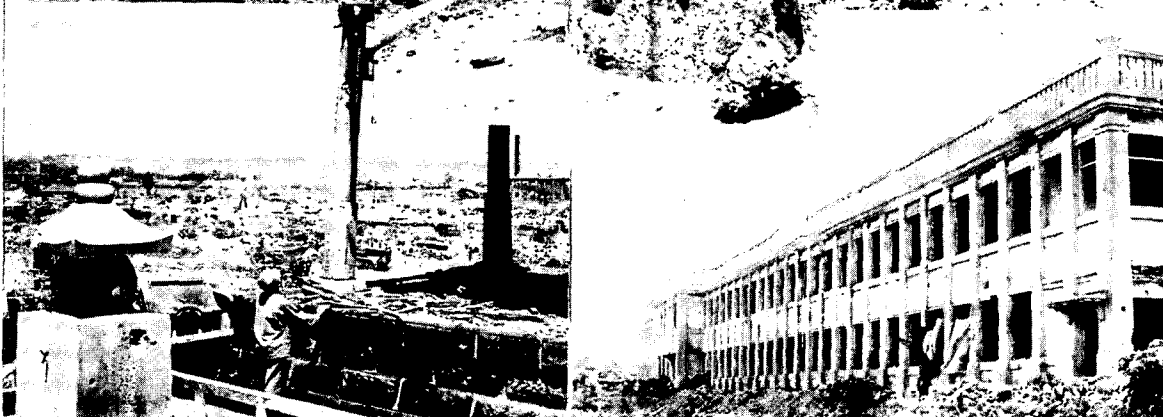


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# JAP DIARY

The following is the translation of a diary taken from the body of a Japanese soldier found dead in the vicinity of Naha. Through the medium of this diary it is possible to obtain a picture of the conditions which confronted enemy troops in the devastated city. Furthermore, it is possible to derive an insight into the mind of the Japanese soldier when he finds himself in an irretrievably hopeless situation.

-----

1 May Well, May has come at last. We are eating foreign food; dried potatoes gritty with sand. We are not working (on fortifications) today. We heard that at last Germany has surrendered unconditionally.

2 May Enemy planes appeared for about one hour this morning, but after that it started to rain and enemy aircraft activity ceased entirely. Thinking the enemy might make a landing at Tomari, we made preparations for battle, but the enemy landing failed to materialize so we ate dinner and hit the sack.

3 May I borrowed Shimizu's razor and shaved. There was no night work so I rested, but it was hot and there were so many fleas and lice that I could not sleep a wink.

4 May I ate five bean buns. Naval gunfire is getting more and more severe. American planes came unexpectedly.

5 May There was a concentration of naval gunfire nearby. Four civilians were killed. Seventeen or eighteen horses were also killed. There were a lot of enemy planes today. Nothing doing tonight, so we slept.

6 May Last year at this time mother was on the brink of death. Right now she is probably feeling fine. It seems that the enemy's strategy consisted of simultaneous landings at Okinawa, Korea, and China but they say his ships are destroyed and that he has failed here.

7 May The fields at home have been sown by now. It drizzled a bit this afternoon. According to an enemy handbill, Hitler has been assassinated, Mussolini and his staff have been sentenced to death, the battleship Yamato was sunk, and Japan has no new-style battleships left.

8 May The news is becoming more and more unfavorable and it seems that death is to be our fate. It certainly is a shame but nothing can be done about it. Enemy planes did not show up today because of rain. It was my turn for a bath today and I got in the hot water. Then I borrowed a pair of clippers and had Shimizu give me a haircut. According to the news from Maeoka, dispatched on the 23d, they had sunk 30 enemy cargo ships the night before. The talk is that victory or defeat will be decided in the next two weeks. We have mined the inner harbor.

9 May Due to good weather, enemy planes came and bombed us heavily. We are moving our troops again.

10 May At 0500 we moved to new positions about 500 yards away and I am with about 6 fellows from the 3d and 4th squads. Strafing by enemy planes is becoming severe.

11 May We moved again before dawn - the 3d and 4th squads, the boat personnel, in fact, the entire force. Naval gunfire has become intense and the positions we were in before received a direct hit. Thank God our lives were saved.

12 May Clear weather today. The enemy is near. We changed positions this night. We used cloth sandals; use of shoes was forbidden. We heard that the army has been ordered to defend this island to the death. All the ship's crew have been put into the army as 2nd Class Privates. We got two sacks of dry bread today. Miyakawa went into the Suicide Unit and was killed. This area is devastated.

13 May Today I keep thinking of the festival at Kamogawa. The enemy fire is terrific. It looks like the end.

14 May Since we entered Naha Harbor two months ago, conditions have continuously deteriorated. The trouble is that victory depends upon control of the air but no friendly airplanes are in the skies. One of the ship's crew went out for vegetables but was killed by shell-fire. Enemy planes came in large numbers. This morning, since the word was that we would move before dawn, I went up to establish communications but was prevented from doing so by fire.

15 May We got some tobacco issued as a present from the Emperor and some cakes. I got one cigarette, about

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a quarter of one cake, and two packages of nutrition ration. It looks like we are to die at last. The enemy has halted at a distance of about 1,000 yards from us. We have some type 38 rifle ammunition left and also 65 rounds of type 3 ammunition for use in machine-guns.

16 May We have placed our machine-guns in position on the high ground. Our food is only half-cooked and filled with sand. I can see the figures of enemy soldiers within 1,500 yards of us.

17 May Eating canned food. I am on duty as an observer of enemy activity. Two or three hand grenades per man have been issued. One of the Ishi platoons was annihilated by enemy naval gunfire. At best, a concentration of 60 rounds dropped within an area 30 feet square is extremely deadly. There is talk that the Grand Fleet will come and destroy the enemy by Navy Memorial Day.

18 May Our forces are without planes, warships, or tanks. Because we are abandoned we have no hope other than to die resisting. This is said to be the resolution of everyone from the army commander down. Our medium artillery is destroyed and we have not even one piece left. ("Juho" is usually translated as "Medium Artillery" but in this case may mean 240mm pieces). Since we are serving our daily allotment of food in two meals, we are hungry. We have come to our end in this despicable land. How I would like to return safely!

19 May After a drizzle of rain, a suicide unit of six or seven men entered my cave under cover of the clouds and darkness. They left at 2000. Maruyama and Nishtani were there also. They say that a letter of commendation of the suicide units has been sent to headquarters.

20 May We moved positions before dawn, leaving our packs behind, and stopped with the 6th Regiment at dusk. We moved again after dark and four men went to the suicide unit but returned almost immediately. There is news of a landing on Amami O Shima. Five hundred of our troops were killed in one night. (This refers to troops on Okinawa).

21 May The order came to move up to the front lines at dawn but the enemy's artillery bombardment was awe-inspiring and so we returned to our positions and rested.

# BEACH DEFENSE

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Though the original landings on 1 April, 1945, were unopposed, the Japanese had constructed an organized set of beach defenses along the southwestern and southeastern coasts of Okinawa.

These defenses had been manned by the enemy until shortly before D-Day. Had they been manned on D-Day, it is generally agreed that they would have represented a serious hazard to the success of the amphibious operation. The bulwark of the enemy's beach defense was a type of cave-strongpoint carved out of the coral rock. Though the natural coral overhead and sides provided these strongpoints with a great deal of protection against air and naval bombardment, they were often reinforced with concrete. Each of the strongpoints was elaborate in nature, carefully constructed, and skillfully placed. In addition, the enemy constructed lighter positions along the beaches designed to protect his strongpoints as well as to assist in the coverage of seaward approaches.

It was learned, through the interrogation of prisoners of war, that the enemy considered the treacherous fringing reef prohibitive to an amphibious landing and was consequently surprised when the Tenth Army landed on that particular segment of the coast.

In general, Japanese beach defenses on Okinawa were an extension of the cave-defense technique employed at the Naha-Shuri-Yonabaru Line and at Oroku Peninsula. (See article on Cave Defense). In an effort to neutralize the effects of our naval gunfire and air strikes, the enemy went underground. His strongpoints were formidable

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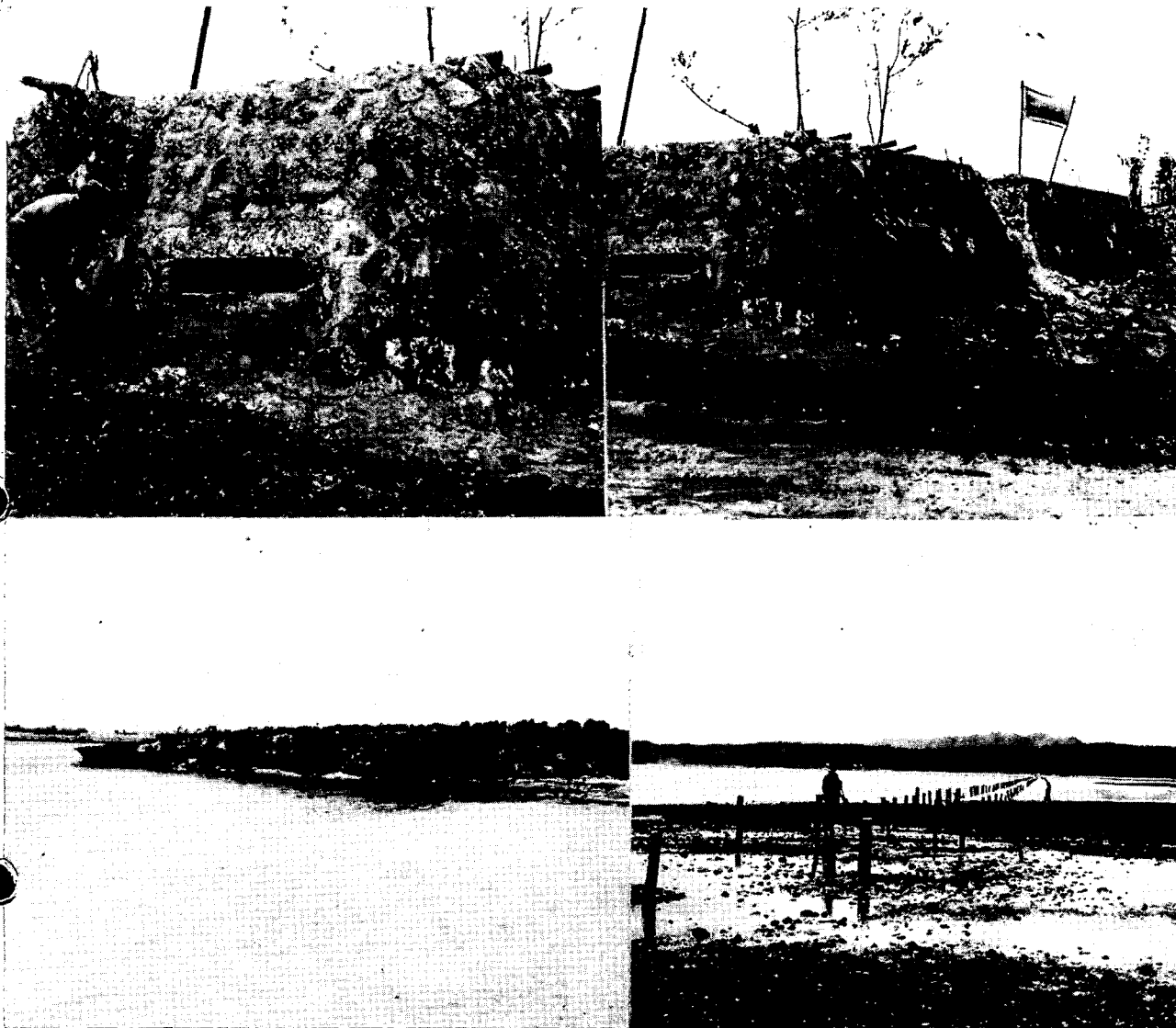
in themselves and were an integral part of a mutually-supporting system. An examination of enemy strong-points on the Sixth Marine Division's beaches, between Sobe Town and Zampa Misaki, revealed that they were virtually impervious to naval gunfire and air bombardment. It is very possible that similar strongpoints are being constructed on Japanese home-island beaches.



Entrance to small cave in coral rock. See Below



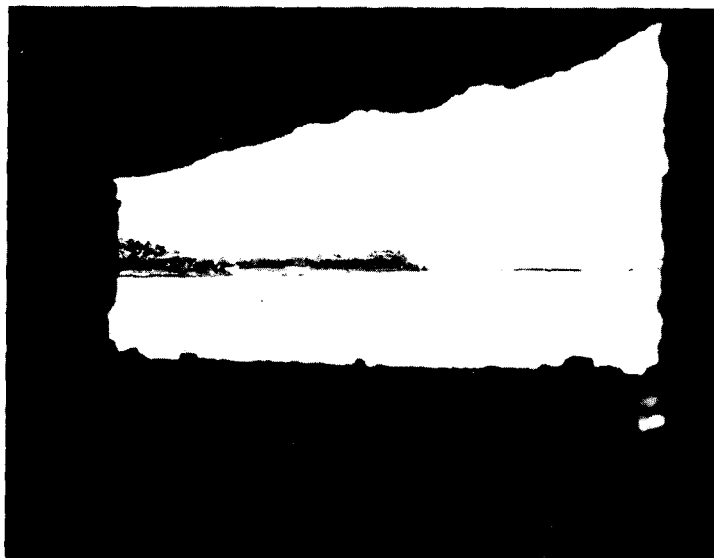
Machine-gun port in small cave enfilading a landing beach.



(Upper Left) Machine-gun port at corner of a seawall fronting one of the landing beaches. (Upper Right) View of the machine-gun port in relation to the seawall. (Lower Left) View of one of the coral cliffs that extended seaward from the landing beaches. These generally housed the cave-strongpoints. (Lower Right) Anti-boat wooden obstacles west of Nakodamari.



Main entrance to cave-strongpoint



View through one of the machine-gun  
ports showing its field of fire



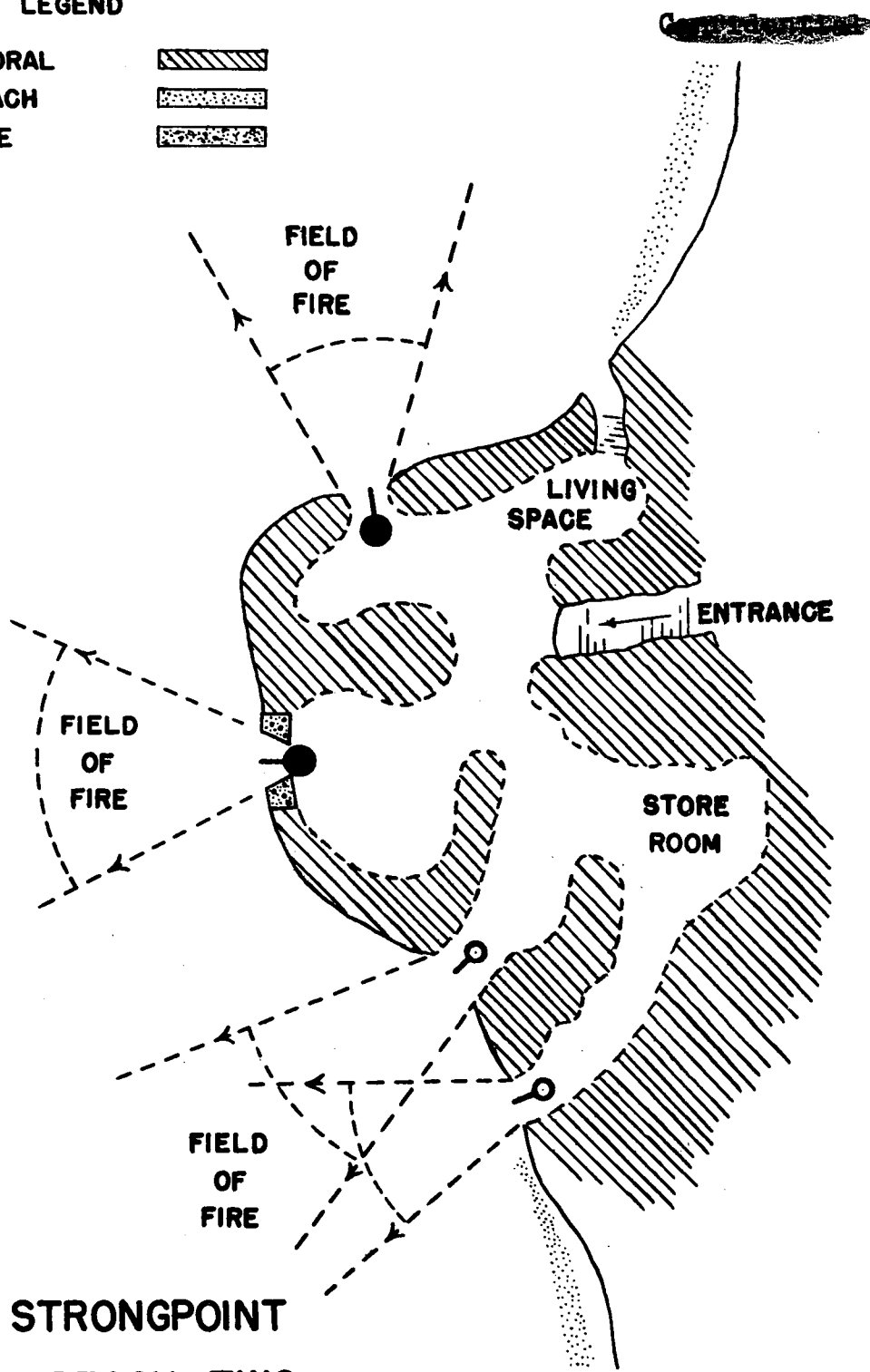
Machine gun port in a strongpoint  
covering a landing beach.



Inside view showing how the beach was  
covered by enfilade fire.

# LEGEND

	SOLID CORAL	
	SAND BEACH	
	CONCRETE	



CAVE STRONGPOINT  
GREEN BEACH TWO



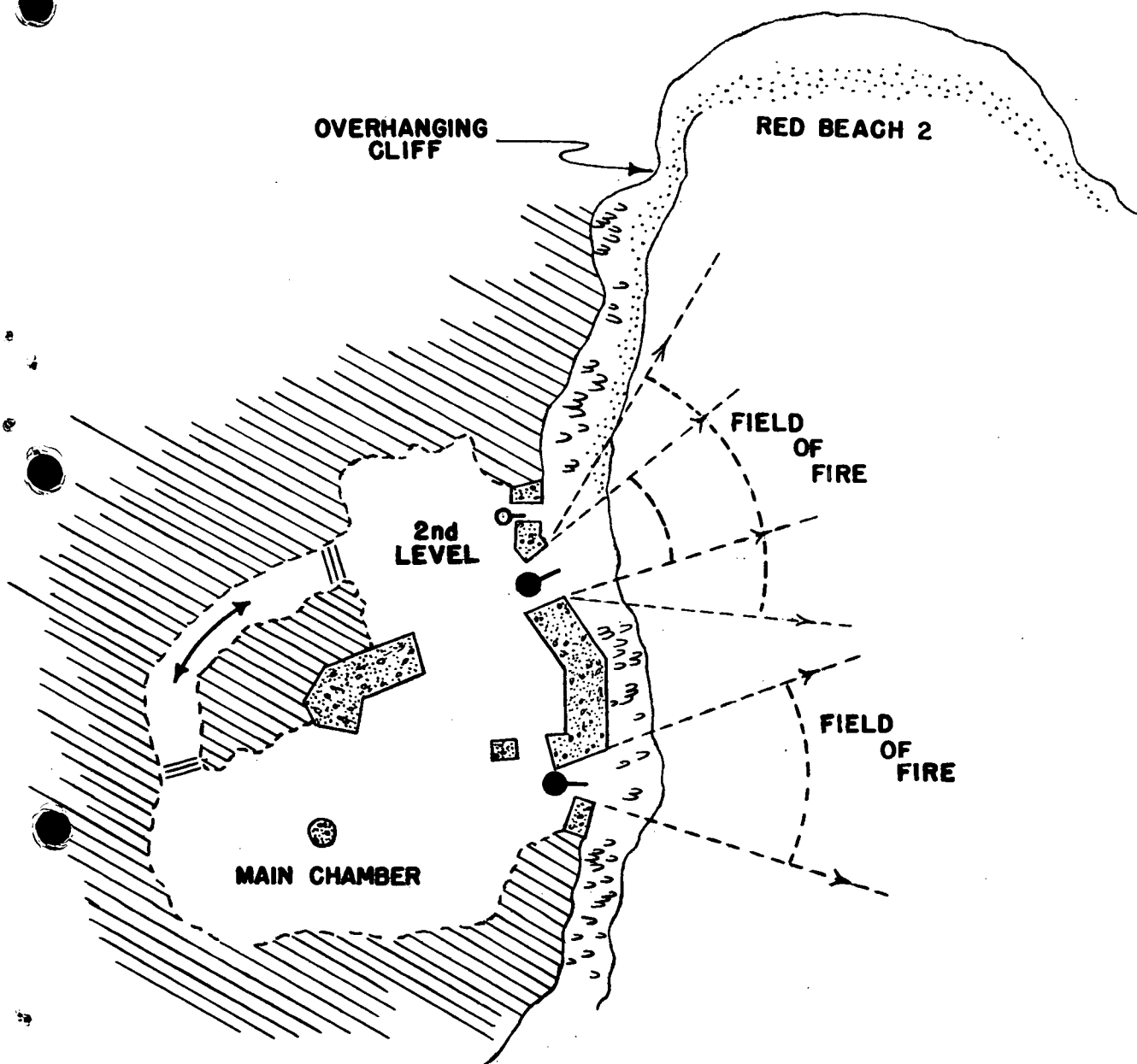
Side entrance to cave-strongpoint



An exterior view of one of the  
machine-gun ports



(Upper Left) Main entrance and small machine-gun port.  
(Upper Right) Coral cliff extending seaward in which  
the strongpoint was constructed. (Lower Left) View of  
the anti-boat gun port showing the overhanging cliff.  
(Lower Right) The anti-boat gun port - constructed of  
concrete and affording the maximum in observation and  
protection for the gunners.



# LEGEND

SOLID CORAL  
 RAZOR CORAL  
 SAND BEACH  
 CONCRETE



## CAVE STRONGPOINT RED BEACH TWO



Main entrance showing cover afforded by overhanging cliff.



Anti-boat gun port and machine-gun slit.

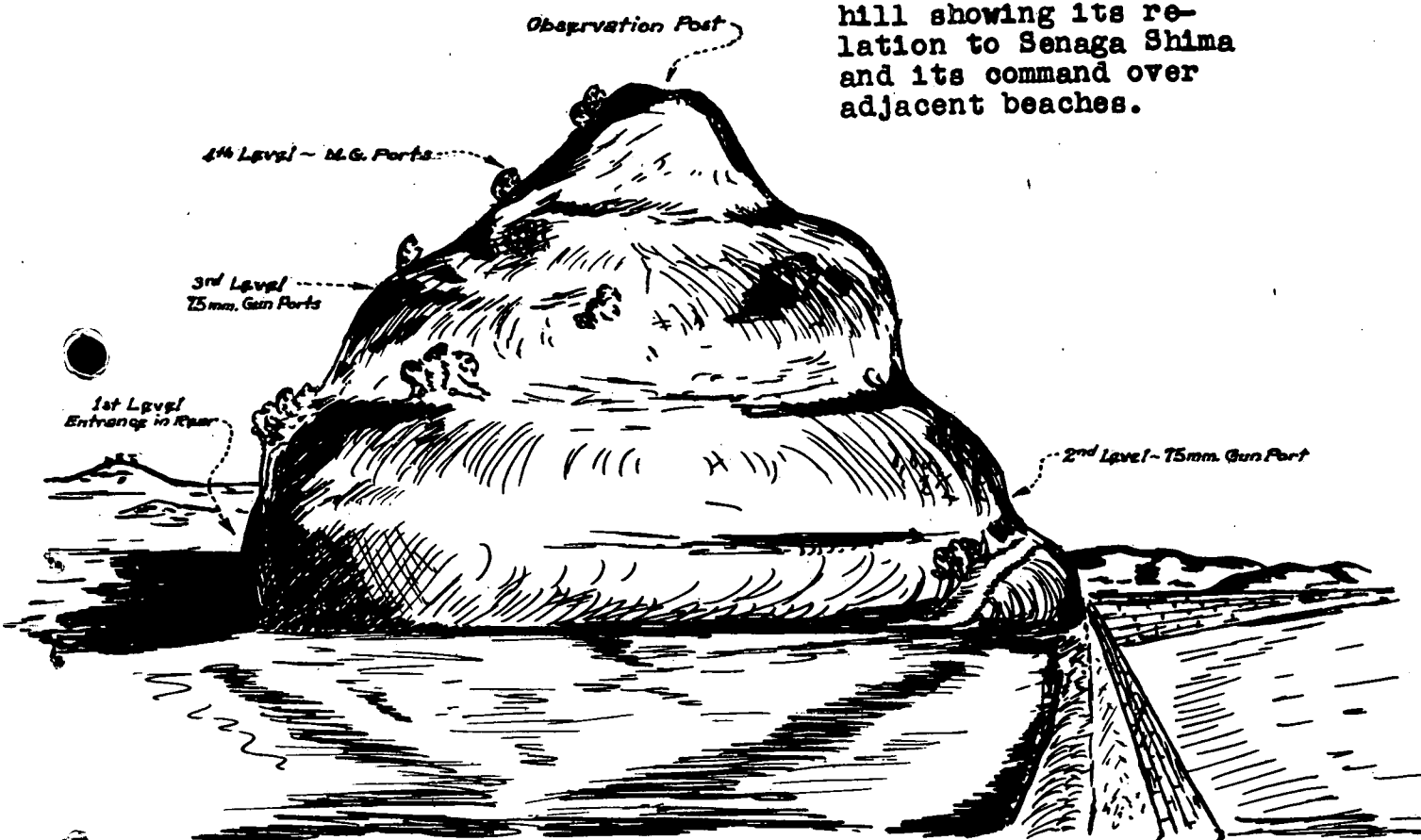


(Top) Japanese bunker along the seawall on Oroku Peninsula. (Bottom) Observation post for 120mm coastal defense gun.

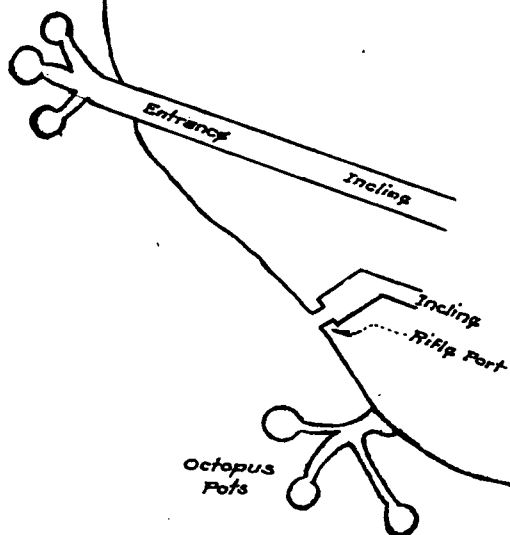
An excellent illustration of a hill converted to cave-defense for protection against landings is that of the hill pictured below. This hill dominated the beaches north of the town of Itoman and south of Naha Airfield. Though it was not encountered by a landing force, it is known that this hill was the anchor-position of the enemy's beach defenses along that particular segment of the coast.



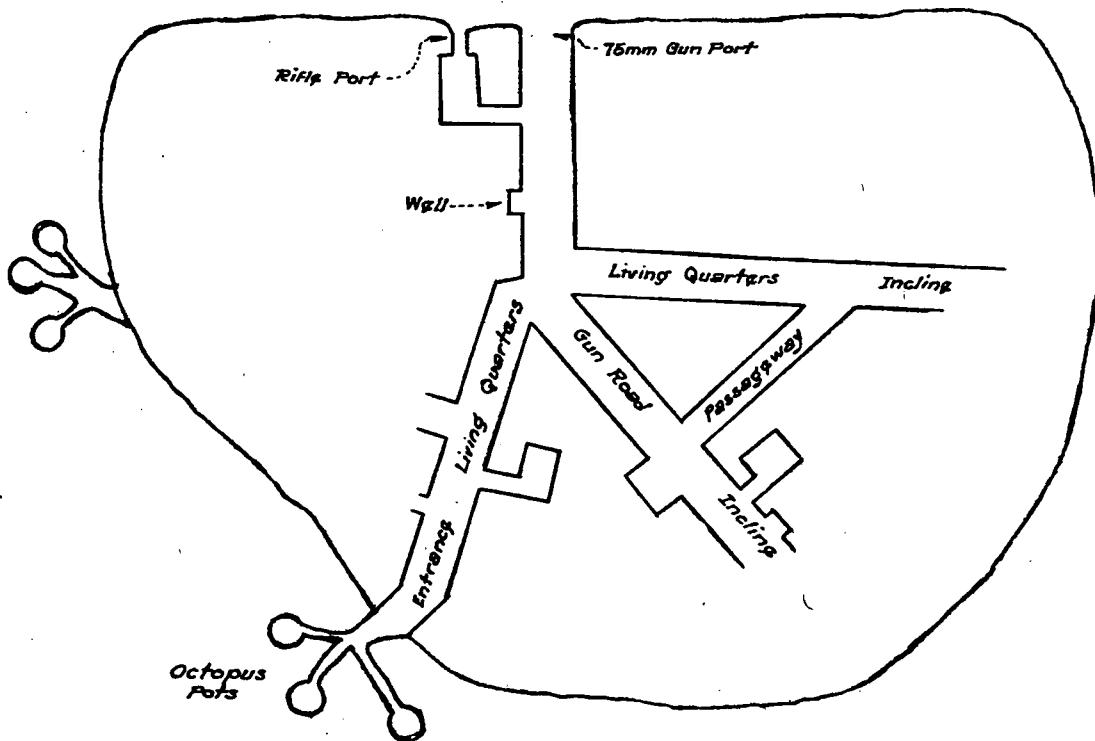
An aerial view of the hill showing its relation to Senaga Shima and its command over adjacent beaches.



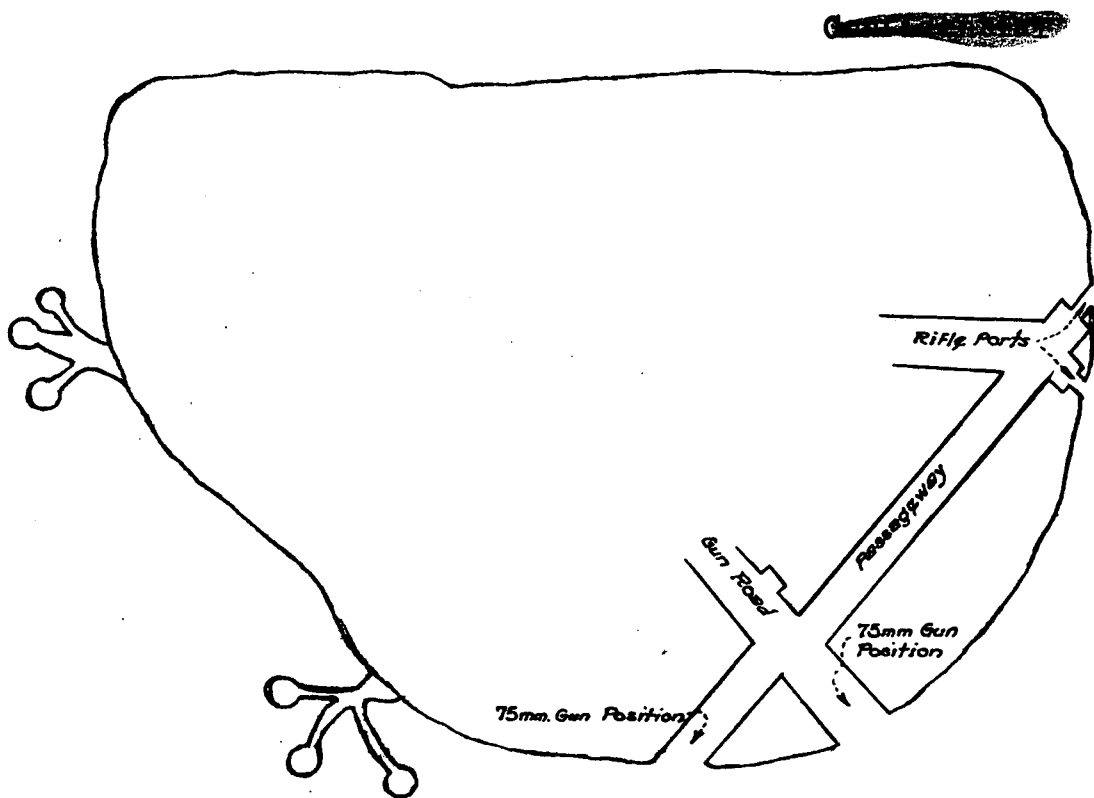
Octopus  
Pods



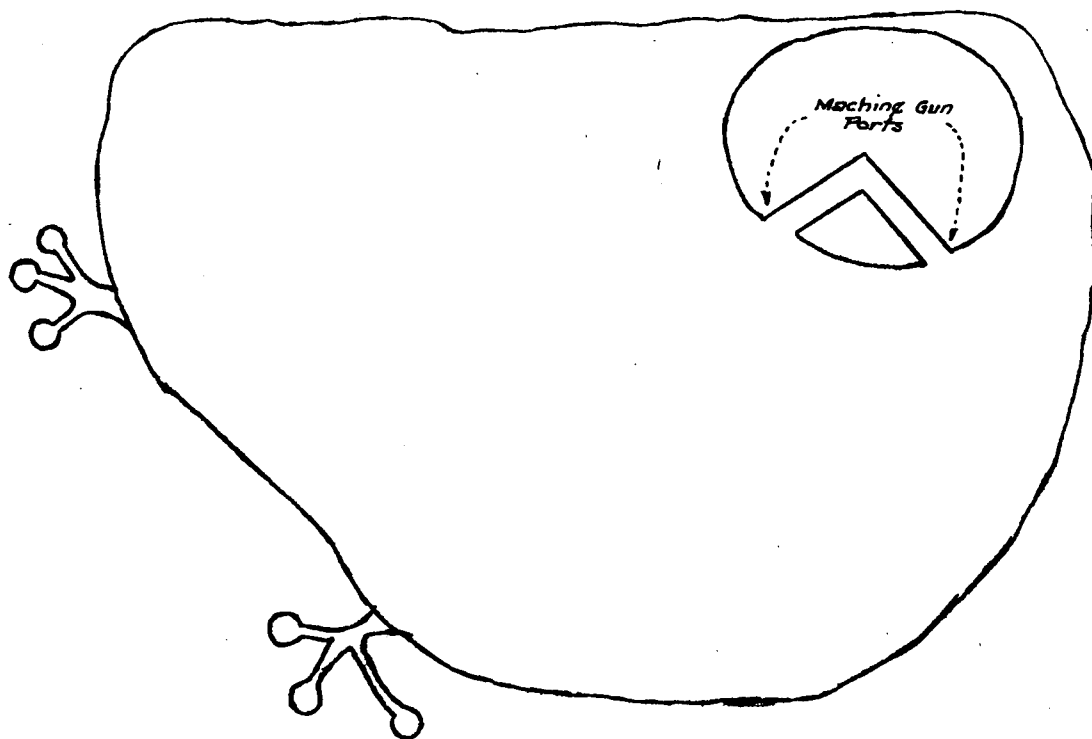
1st LEVEL



2nd LEVEL



**3rd LEVEL**

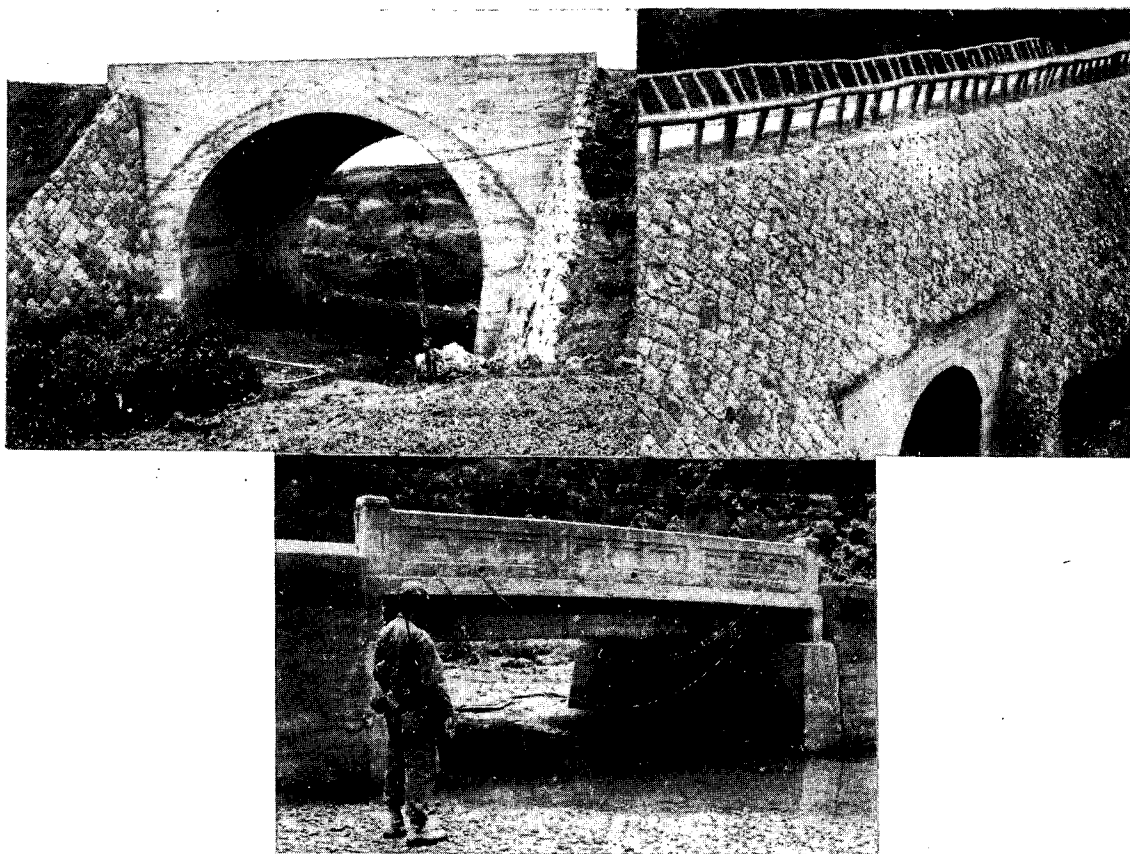


**4th LEVEL**

# CONSTRUCTION

Construction-types on Okinawa are similar to those in the rural areas of the Japanese home-islands. An effort has been made to select construction types and show them pictorially in the pages that follow. It is of additional interest to note how the various construction types withstood demolitions and bombardment.

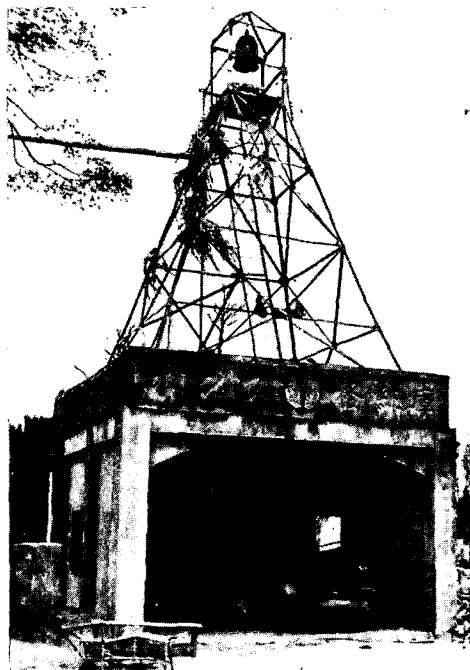
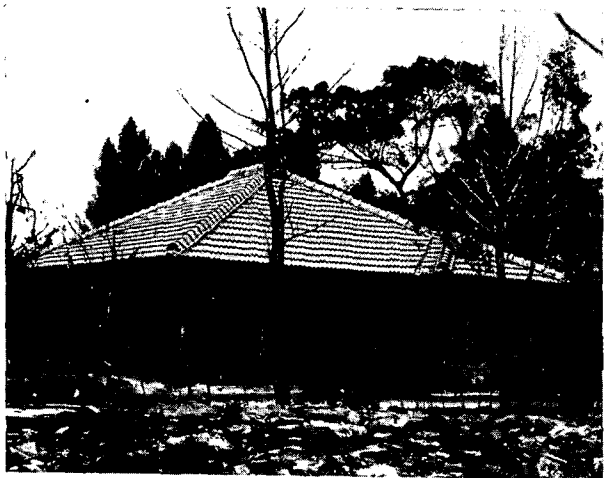
## BRIDGES





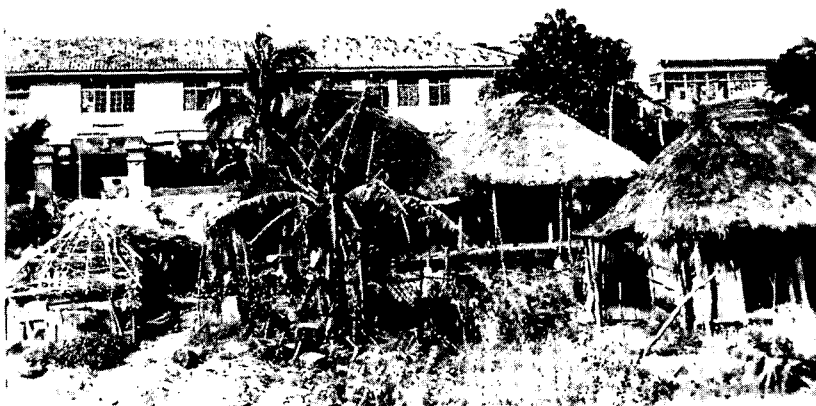
Above are five typical Okinawan bridges demolished by the enemy to impede the Sixth Marine Division advance. The success or failure of their demolitions will be immediately evident.

## BUILDINGS



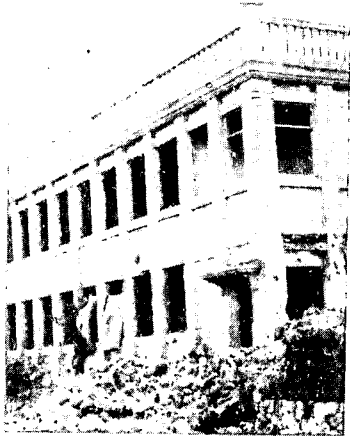
(Upper Left) Typical Okinawan home found in urban areas.  
 (Upper Right) Concrete commercial structure found in Naha. (Lower Left) Mage fire-house of concrete construction. (Lower Right) Typical Okinawan home found in rural areas.

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(Upper) Okinawan town showing typical homes which have and have not been hit by artillery. (Left Center) The entrance to a large school building outside of Nago. (Right Center) Upper middle-class Okinawan home. (Lower) View of large school building near Nago with farm buildings in the foreground.

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Section of a school building in Naha.



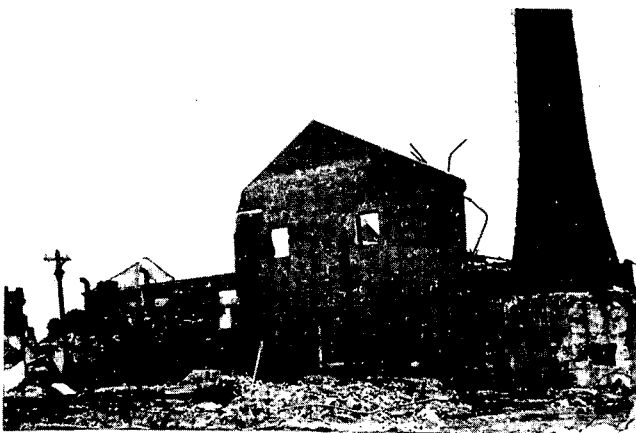
View of an Okinawan park on OnoYama Island.



Christian church in Naha.



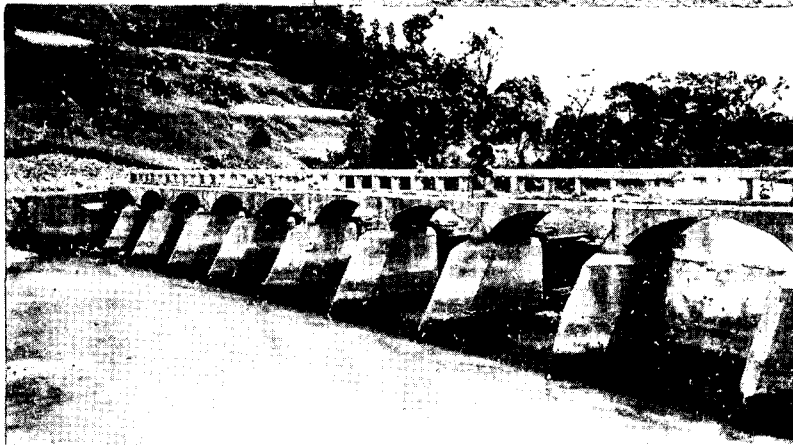
Remnants of a small factory on Northern Okinawa.



Remnants of a small factory in Naha.

# DAMS

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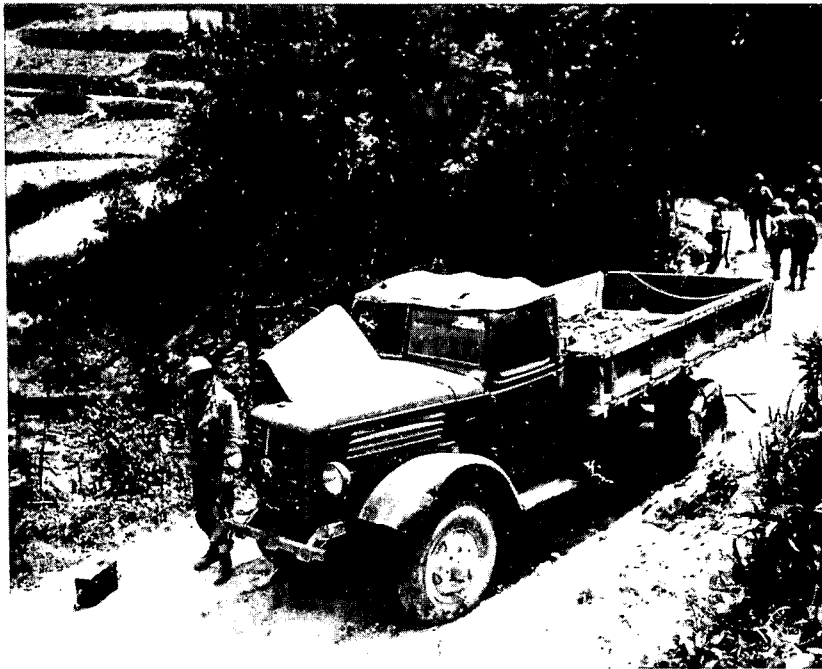


Three views of a dam west of Nago on the Toguchi Road. The dam is of concrete construction with wooden hand-operated sluice gates.

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## ROADS

Primary roads on Okinawa were found generally in the southern part of the island linking important towns, or along both coasts of the northern part of the island. Roads were of coral construction and varied between 12 and 15 feet in width. Few roads existed in the mountainous areas and these were, for the most part, little more than dirt trails.



A primary road in Northern Okinawa showing the width and surface.

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Road extending out on  
a stone pier west of  
Nakodamari.



Segment of primary  
road in Central  
Okinawa. Note the  
width and surface.

Aerial view of road  
linking Machinato and  
Naha. This road was  
widened by the Ameri-  
cans at the time of  
the photograph.



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View of a primary road  
east of Naha.



View of the primary  
coastal road running  
along the west coast  
of Northern Okinawa.



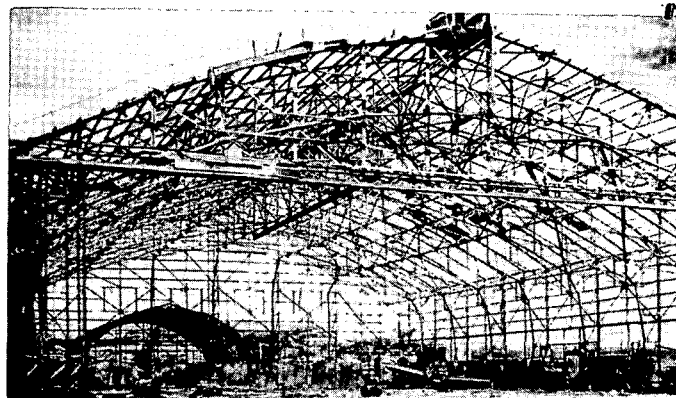
# AIRFIELDS



Naha Airfield



Yontan Airfield



The Sixth Marine Division took the two major airfields on Okinawa - Yontan and Naha. Above are illustrations of installations found on both fields. (Upper) A wrecked hangar at Naha Airfield. (Left Center) a Japanese aircraft revetment and adjacent air-raid shelter. Yontan Airfield. (Right Center) A covered revetment at Yontan Airfield. (Lower) Interior of aircraft revetment. Yontan Airfield.

## TOWNS

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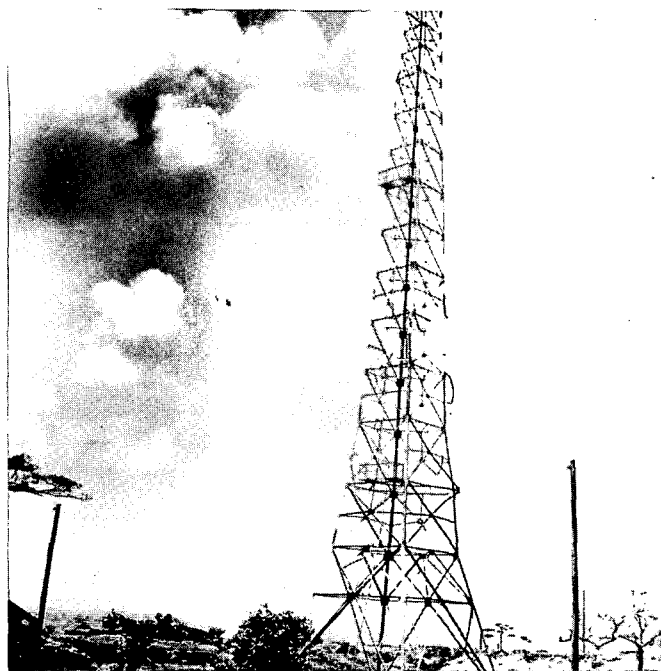
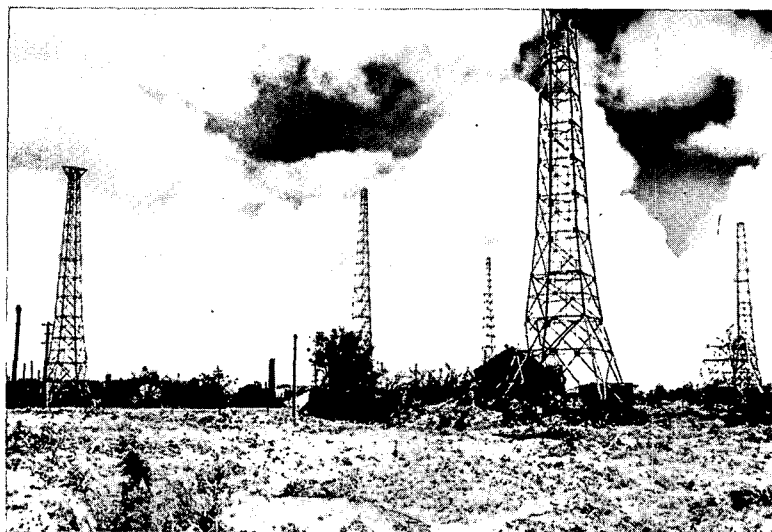
(Upper) Aerial view of Naha showing what was once one of its most populated districts. (Lower) Aerial view of Itoman, an important Okinawan coastal city, which escaped the devastation that befell Naha.

~~CONFIDENTIAL~~



Two aerial obliques of the town of Hanza, near Yontan Airfield. Hanza is a typical Okinawan town. Scarcely more than a village, it is in reality a collection of small farms and stores. Houses are of wood construction with each house surrounded by a wall fringed with shrubbery.

## TOWERS



Radio towers east of Naha. Towers such as these were used by the enemy as Observation Posts. Though it was difficult to destroy these towers by artillery or aerial bombing, air-bursts were successfully used to prevent the enemy from using them.

# DECEPTION

On Okinawa, the Japanese worked hard to be deceptive - and with success. Camouflage efforts were particularly effective. Dummies were used extensively. The Japanese made extensive use of the multi-colored landscape and shadow-casting dummies to prevent our aerial photo interpreters from detecting the presence of his troops and installations. At Unten Ko, a midget-submarine base, the enemy brought the submarines several hundred yards inland on tracks and hid them in large and well-camouflaged caves. Dummy aircraft were found at Yontan Airfield. Castle Hill, overlooking Yontan Airfield, was made to appear like a most formidable defensive position though it was actually unoccupied. The principle of deception was one of the virtues of the cave-defense technique and the Japanese took maximum advantage of that virtue.



Tracks running inland from Unten Ko. These were used to bring midget submarines to their camouflaged caves.



(Upper Left) Dummy gun found on Oroku Peninsula.  
 (Upper Right) Camouflaged small boat pen located  
 at Ono Yama Island. (Lower Left) Dummy AA gun  
 on Castle Hill. (Lower Right) Typical camouflaged  
 hillside cave.



- (Upper Left) Dummy AA gun on Castle Hill.  
 (Upper Right) Dummy AA gun on Castle Hill.  
 (Lower Left) Close up of gun in Upper Right.  
 (Lower Right) Excellently camouflaged Japanese  
 barracks.

# TERRAIN

During the Okinawa Operation, the Sixth Marine Division conquered two-thirds of the physical land mass of the island. The division landed on the beaches between Sobe Town and Zampa Misaki on the west coast of Central Okinawa. In less than four weeks it had conquered the great, mountainous, northern segments of the island. When its first two phases were completed, the Sixth Marine Division came south and conquered segments of Southern Okinawa including Orokū Peninsula.

The division therefore experienced all existing types of terrain on the island. In the north, it experienced extremely rugged mountains; in Central Okinawa it encountered foothills, dissected terraces, and escarpments; in Southern Okinawa it encountered coastal flats, coral hills, abrupt coral ridges, and rolling plains.



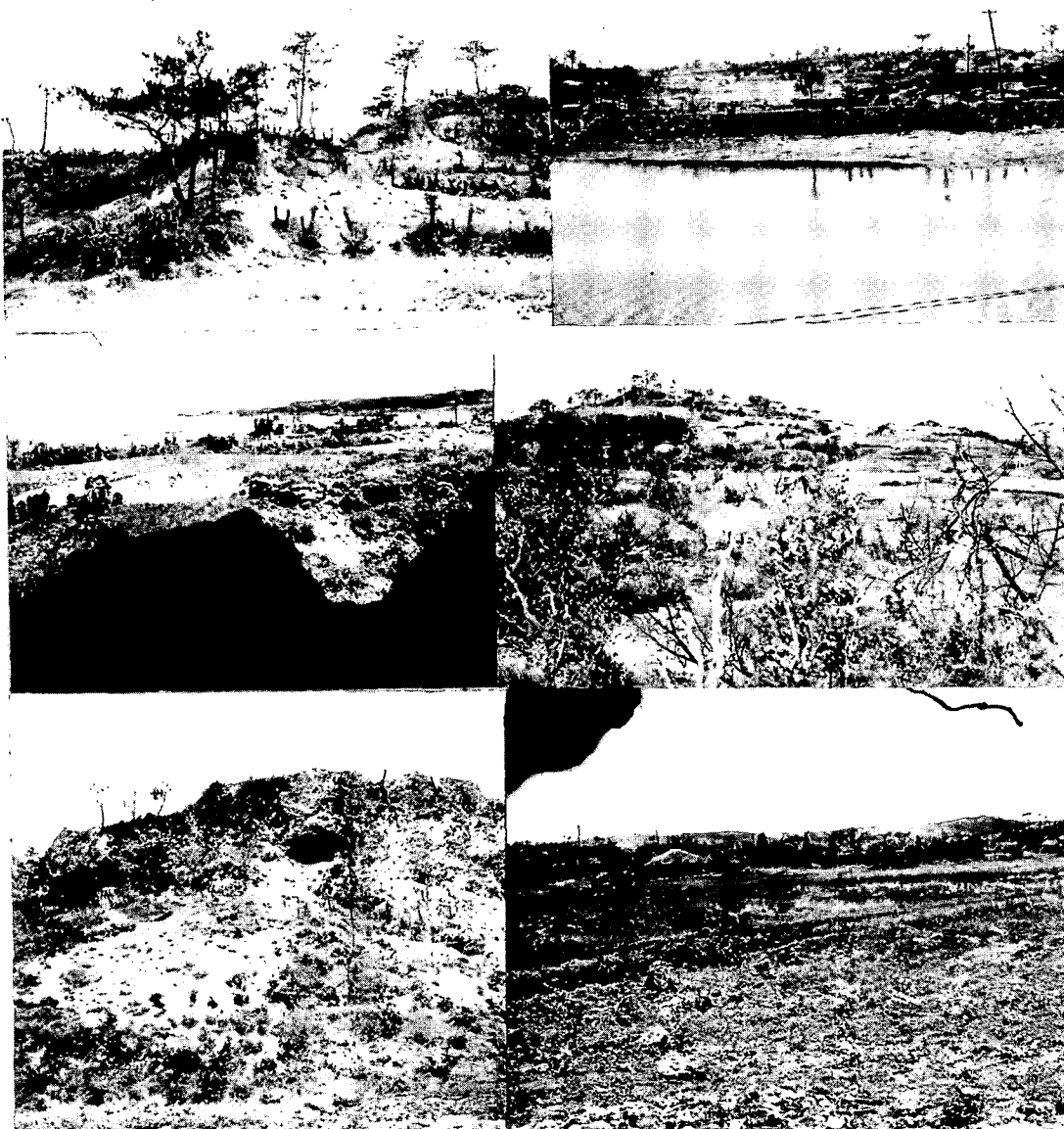
A view of Motobu Peninsula from the southwest coast. Note mountains and rice-paddies.



Views of Northern Okinawa. Note the abruptly rising mountains along the coast, the rice-paddies in the small valleys formed by the mountains, the trails, and the jagged peaks.



Views of Central Okinawa. Note the rolling terrain, rice-paddies, scrub-growth on the hillsides, and the escarpments.



Views of Southern Okinawa. Note the abrupt coral hills and ridges, the shallow muddy river, the level terrain in the river corridors and the hill mass dividing southeastern and southwestern Okinawa.

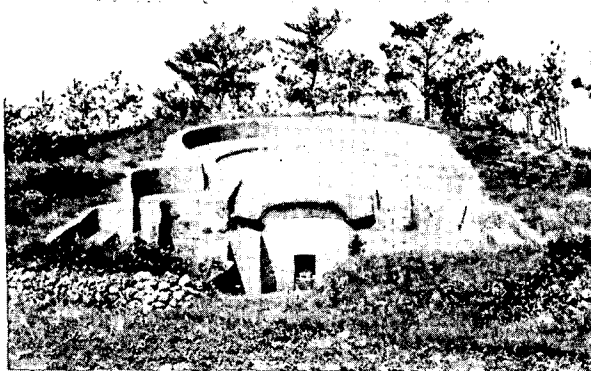


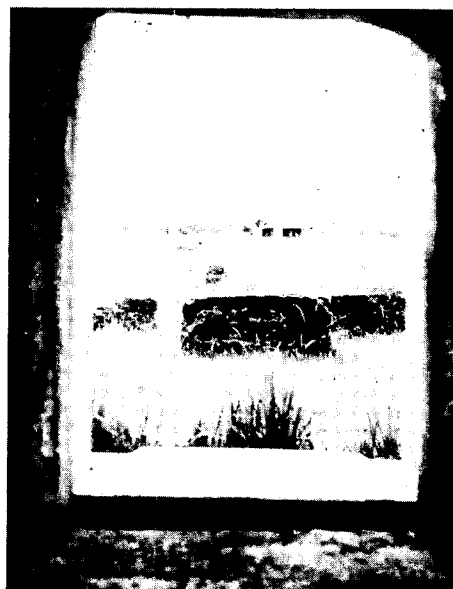
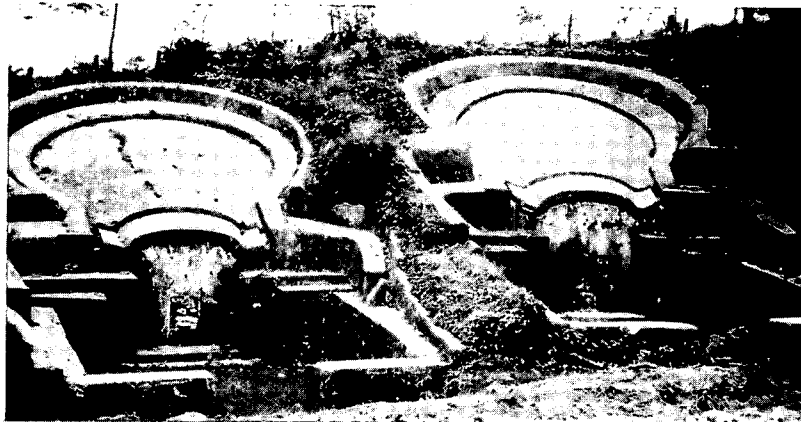
(Upper) Aerial view of mountainous Motobu Peninsula.  
(Center) Aerial view of Senaga Shima, off the west coast of Southern Okinawa. (Lower) Aerial view of the south coast of Okinawa where final resistance on the island was destroyed.

# TOMBS

Ancestor worship is a quality of Ryukyu culture. Okinawans, therefore, constructed elaborate tombs for their dead. These tombs were generally of cement-limestone construction and were placed on hillsides which could not be utilized for cultivation. As illustrated below, Okinawan tombs varied considerably.

The Japanese made extensive use of these tombs. In many instances, the tombs were converted into pillboxes. More often, the Japanese utilized these tombs for storage of ammunition and supplies or simply as bomb shelters. Hundreds of them were included as tactical and storage installations in the enemy's Naha-Shuri-Yonabaru Line.



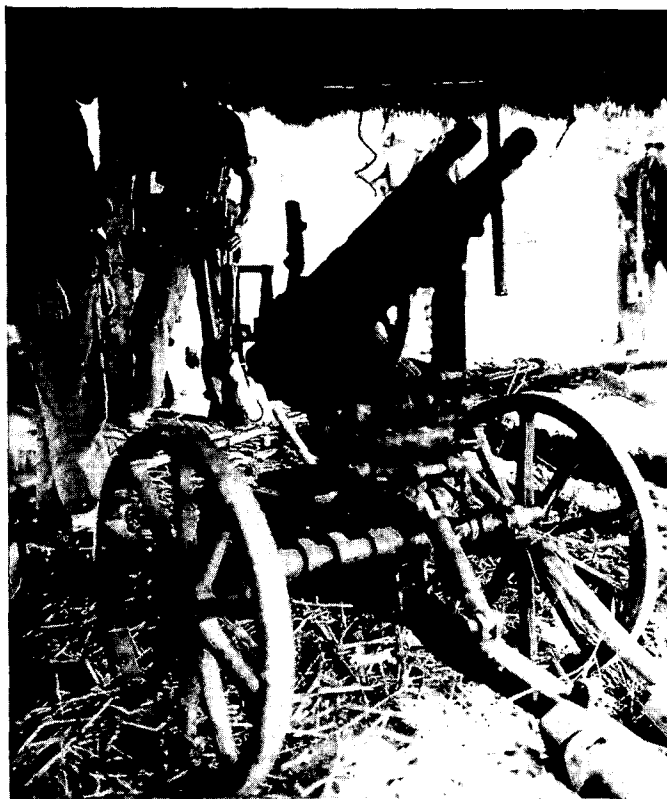


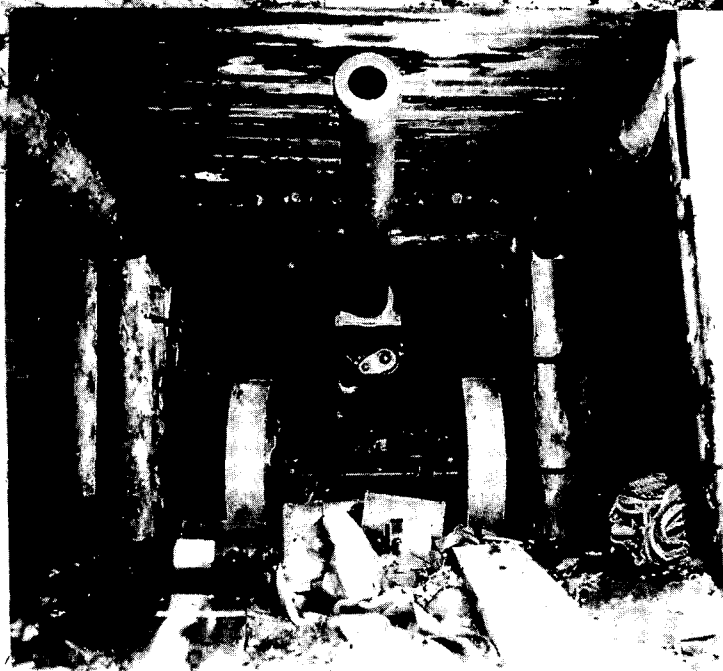


## WEAPONS AND EQUIPMENT

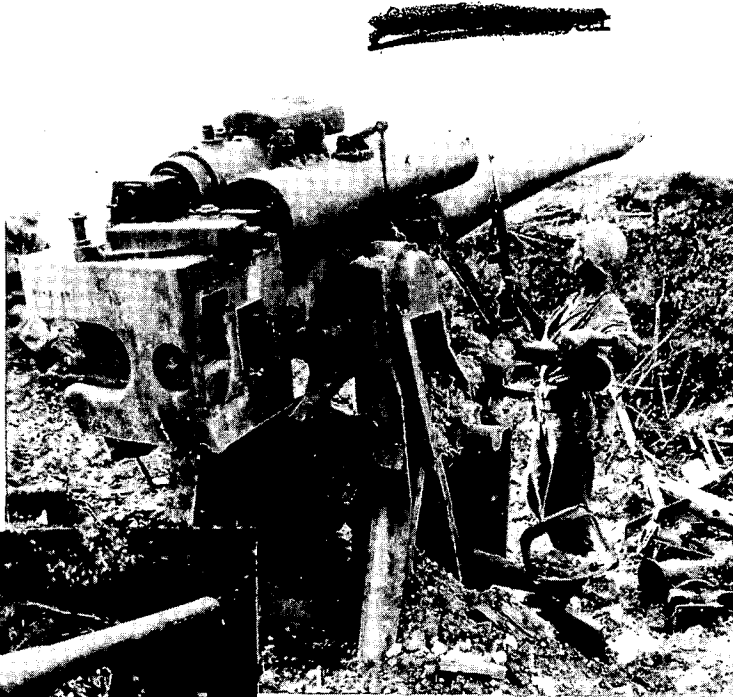
The main enemy line of defense on Okinawa was organized in depth and maximum use made of the terrain. First line defenses were prepared on forward slopes where automatic weapons were emplaced. When forced from the forward positions, the enemy withdrew to the reverse slopes and continued his defense from previously prepared positions. Flat trajectory fire was used to its maximum extent.

The following photographs show typical weapons used by the Japanese while carrying out this so-called "Okinawan Type of Defense."





(Upper Left) 120mm gun overlooking Naha Harbor. (Upper Right) Captured 6" naval rifle. (Center) Japanese 150mm gun found in a cave on Motobu Peninsula. (Lower Left) 120mm dual purpose gun. (Lower Right) 120mm gun in casemate on Oroku Peninsula.



(Top) 127mm dual purpose gun east of Naha Airfield.  
 (Center) 6" naval rifle found on Motobu Peninsula.  
 (Bottom) 5" coast artillery gun on Oroku Peninsula.



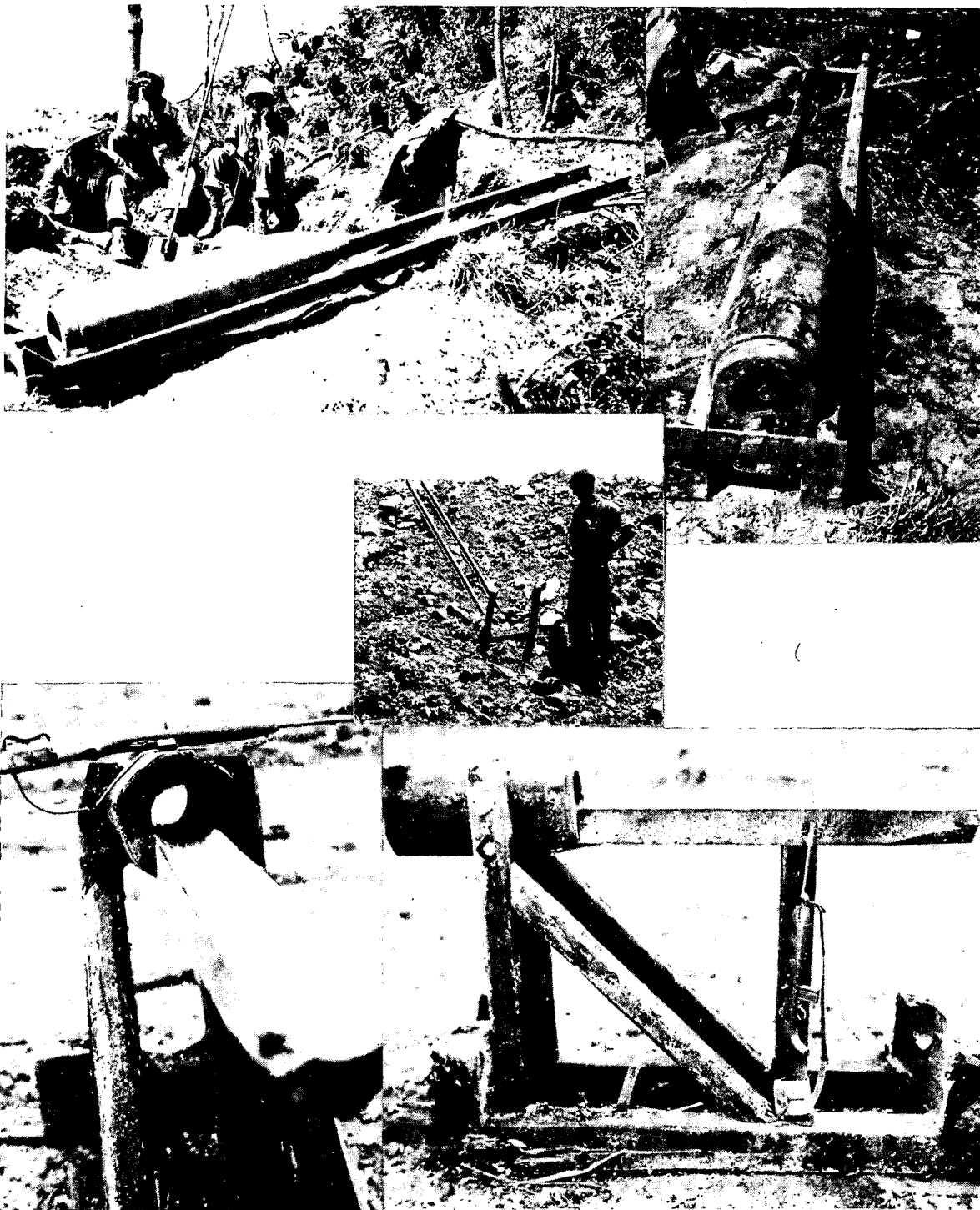
120mm coastal defense  
gun completely demol-  
ished by a direct hit.

155mm gun in casemate  
on Oroku Peninsula.

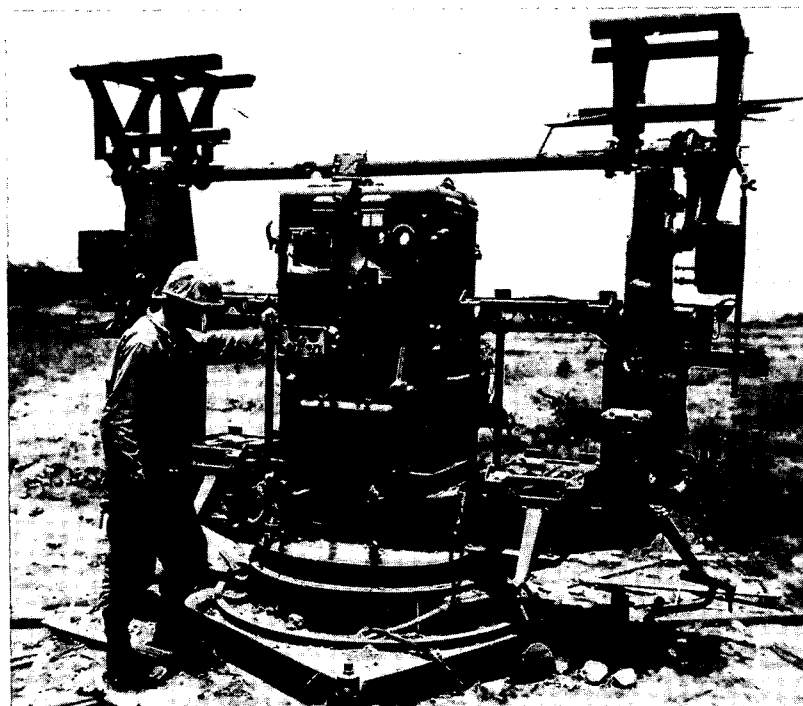




(Upper Left) Japanese 37mm Anti-Tank gun. (Upper Right) Camouflaged 47mm Anti-Tank gun. (Lower Left) Japanese naval searchlight. (Lower Right) Aircraft machine gun converted for ground use.



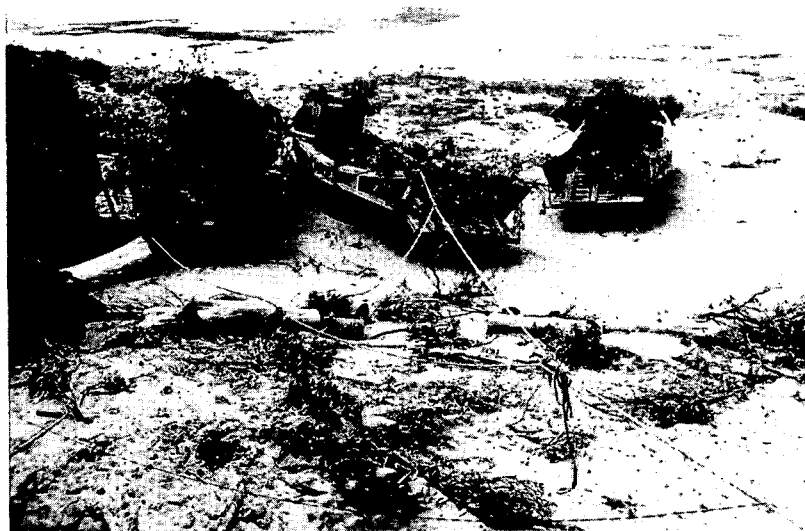
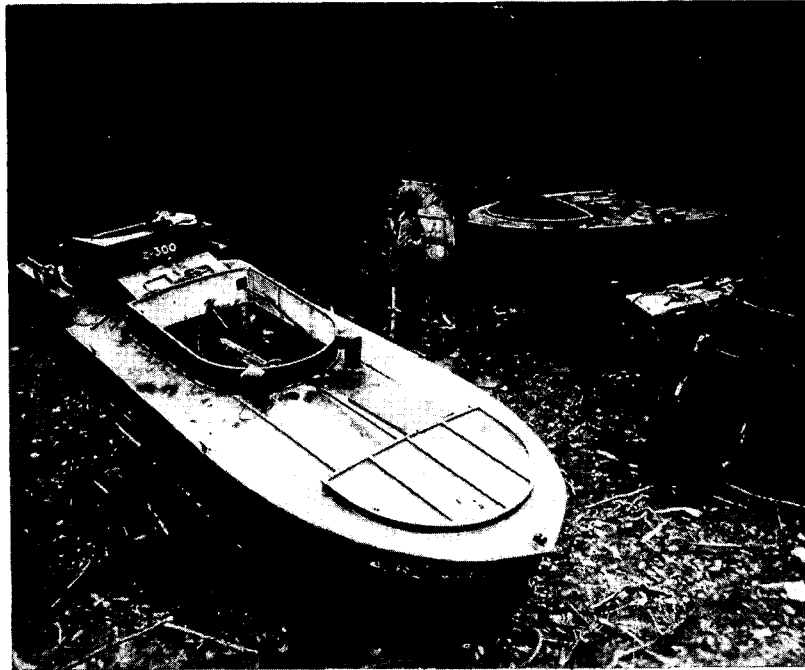
(Upper Left) Rocket and launcher found on Oroku Peninsula  
 (Upper Right) Close up of rocket launcher. (Center) View  
 showing launching ramp. (Lower Left and Right) Two views of  
 crude wooden rocket launcher.



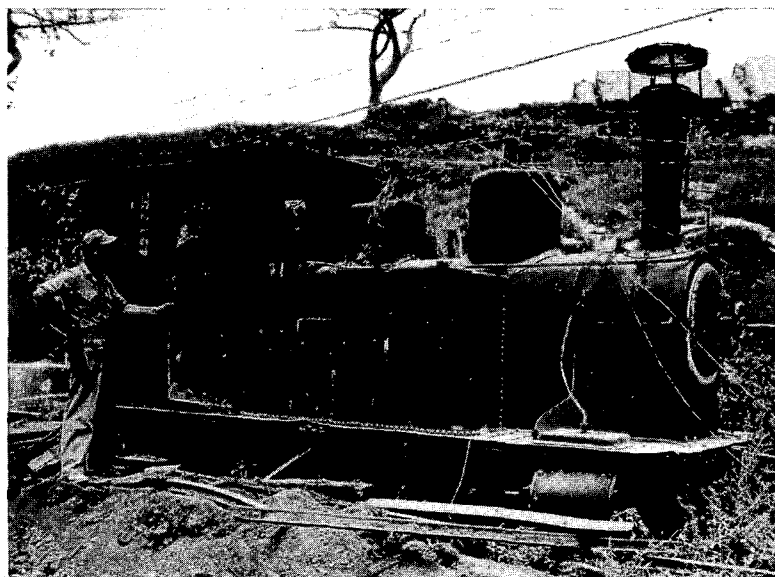
(Top) Japanese radar captured on Oroku Peninsula. (Bottom) View of another type of Japanese radar.



(Top) Captured Japanese radar antenna showing mount, dipoles and antenna feed lines. (Bottom) Fire control director found on Naha Airfield.



(Top) View of the Japanese suicide boat base on the west coast of Ishikawa Isthmus. (Bottom) Camouflaged Japanese landing barge on the west coast of Nago.



Locomotive used on the Naha-Shuri-Kadena run.



View of the railroad yards in Naha.

## SUGAR LOAF HILL

One of the toughest battles fought on Okinawa was for the supremacy of Sugar Loaf Hill. The following pictures show graphically the importance of this hill in relation to the surrounding terrain.



